



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,942	01/31/2006	Robert Kagermeier	2003P07355WOUS	9408

7590 09/30/2009  
Brinks Hofer Gilson & Lione  
P O Box 10395  
Chicago, IL 60610

EXAMINER
----------

CERULLO, LILIANA P

ART UNIT	PAPER NUMBER
----------	--------------

2629

MAIL DATE	DELIVERY MODE
-----------	---------------

09/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,942	<b>Applicant(s)</b> KAGERMEIER ET AL.	
	<b>Examiner</b> LILIANA CERULLO	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

In an amendment dated, 7/27/2009, the Applicant amended claims 1 and 3.  
Currently claims 1-18 are pending.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-7, 9-14 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. in US 2003/0218720 (hereinafter Morita) in view of Kienzle, III et al. in US 6,285,905 (hereinafter Kienzle) and Tomasi et al. in US 2002/0021287 (hereinafter Tomasi).

3. Regarding **claim 1**, Morita teaches a control unit (3D apparatus of para. 3) comprising,

a sterilizable screen (Figs. 21-22 and para. 108, sterilized image panel 169), which is free of electronic components and on which a user control field is reproducible (as shown in Figs. 21-22, and taught in para. 108 and 103, the screen is a disposable projection panel where an image is projected, and as shown, it's only positioned mechanically in front of the viewer),

a detection device (Fig. 16 and para. 86, position detection camera 145, and projection apparatus 140) for detecting a change in a position of an object relative to the

Art Unit: 2629

screen (para 86-88 teach the detection camera 145 picks up the markers 146, 147 and 148, and specifically para. 88 teaches that when the position of the marker 148 and the icon 143 are the same, the machine is controlled).

Morita fails to teach a sterilizable protective housing for the detection device.

However, Kienzle teaches an apparatus for surgery (Kienzle, col. 1 lines 14-22) where an arm used in close proximity to the patient during surgery (Kienzle, Fig. 1, 113) is covered with a sterile drape (Kienzle, Fig. 10 and col. 16 lines 29-33. Note that the sterile drape is mechanically attached to the arm by elastics 198). Furthermore, Kienzle teaches switching (activating) a selection based on voice command (Kienzle, col. 23 lines 10-13).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention, to cover the arm (as taught by Kienzle) holding Morita's projection device in order to maintain sterile all equipment used during surgery (Morita, Figs. 21, 22 and 24 and paras. 110-114). Furthermore, it would also have been obvious to one of ordinary skill in the art at the time of the invention, to activate a selection based on voice command (as taught by Kienzle), including switching on the detection device, in order to provide the surgeon with more features to control the device, that do not require the surgeon any extra movement of the hands.

By doing such combination, Morita in view of Kienzle teach:

a sterilizable protective housing (Kienzle, Fig. 10, sterile drape) connected mechanically (Kienzle, Fig. 10, elastics 198) to the sterilizable screen (Morita, Figs. 21-

Art Unit: 2629

22, panel 169, 173), the protective housing being free of electronics (as shown in Kienzle Fig. 10 and Morita's Figs. 21-22 and 24), and

wherein for switching on the detection device (Morita, Fig. 16 and para. 86, position detection camera 145, and projection apparatus 140), a device for acoustic activation by voice input is provided (Kienzle, col. 23 lines 10-13).

Nonetheless, Morita in view of Kienzle fail to teach the sterilizable protective housing receiving the detection device. However, Tomasi teaches an input device that projects the display and detects input at the displayed surface (Tomasi, Fig. 1A) and the display projector and sensor are both part of the display (Tomasi, Fig. 1A, 140 is the display, 20 is the emitter projecting the virtual input device 50 per para. 30, and detector 60 per para. 41). Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the invention, to use an input device as taught by Tomasi, in Morita's control unit (Morita, Fig. 16, element 140), and thus obtain the benefit of an inexpensive input device that can be operated from the same power source (Tomasi, para. 101) and also obtain the benefit of a system that improves on separate camera/image-detector optical system by ignoring ambient light (as taught by Tomasi in para. 37). By doing such combination, Morita's detection system (Morita, Fig. 16, element 145) would be part of the projection apparatus (as taught by Tomasi in Fig. 1A, which is equivalent to Morita projector 140 of Fig. 16) and thus, upon combination, Morita in view of Kienzle and Tomasi disclose:

the sterilizable protective housing (Kienzle, Fig. 10, sterile drape) operable for receiving, in a reversible manner (as shown in Kienzle, Fig. 10), the detection device

Art Unit: 2629

(which correspond to Morita's Fig. 16, control unit 140 that upon combination with Tomasi includes both emitter and receiver as shown in Fig. 1A).

4. Regarding **claim 2**, Morita in view of Kienzle and Tomasi teach the screen to be a projection screen (Morita, para. 108), and the detection device (Morita, Fig. 16 and para. 86, projector 140, which correspond to Tomasi's input device Fig. 1A) comprising a projection/detection unit (Morita, Fig. 16 projector 140 and Tomasi's Fig. 1A) which includes a projection device for projecting the user control field (Morita, projector in projection apparatus 140 projects image onto screen per para. 41) onto the projection screen (as shown in Morita's Fig. 3 and 16).

5. Regarding **claim 3**, Morita teaches a control unit (3D apparatus of para. 3) comprising,

a sterilizable screen (Figs. 21-22 and para. 108, sterilized image panel 169), which is free of electronic components and on which a user control field is reproducible (as shown in Figs. 21-22, and taught in para. 108 and 103, the screen is a disposable projection panel where an image is projected, and as shown, it's only positioned mechanically in front of the viewer),

a detection device (Fig. 16 and para. 86, position detection camera 145, and projection apparatus 140) for detecting a change in a position of an object relative to the sterilizable screen (para 86-88 teach the detection camera 145 picks up the markers

Art Unit: 2629

146, 147 and 148, and specifically para. 88 teaches that when the position of the marker 148 and the icon 143 are the same, the machine is controlled),

wherein the detection device (Fig. 16 and para. 86, position detection camera 145, and projection apparatus 140) is a projection (para. 84 referring to projection panel 141) detection unit (para. 84, referring to detection camera 145) having a projection device (para. 84, element 141) for projecting the user control field onto the projection screen (para. 84), and

a proximity switch (detection camera 145) for switching the projection/detection unit upon the approach of an object to the projection screen (para 88 where the detection camera 145 picks up when the position of the marker 148 and the icon 143 are the same, and any function of the machine starts or stops).

Morita fails to teach a sterilizable protective housing for the detection device, and using the proximity switch for turning on the projection/detection unit.

However, Kienzle teaches an apparatus for surgery (col. 1 lines 14-22) where a mechanical arm used during surgery (Fig. 1, 113) is covered with a sterile drape (Fig. 10 and col. 16 lines 29-33. Note that the sterile drape is mechanically attached to the arm by elastics 198).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention, to cover the arm (as taught by Kienzle) holding Morita's projection device in order to maintain sterile all equipment used during surgery (Morita, Figs. 21, 22 and 24 and paras. 110-114). Furthermore, it would also have been obvious to one of ordinary skill in the art at the time of the invention, to switch on the projection/detection

Art Unit: 2629

unit upon close proximity of an object with the icons on the projection screen (as taught by Morita) because this would allow the user to turn on the machine without the need of a console (Morita, para. 89).

By doing such combination, Morita in view of Kienzle teach:

a sterilizable protective housing (Kienzle, Fig. 10, sterile drape) connected mechanically (Kienzle, Fig. 10, elastics 198) to the screen (Morita, Figs. 21-22, panel 169, 173), the protective housing being free of electronic components (as shown in Kienzle Fig. 10 and Morita's Figs. 21-22 and 24), and

the proximity switch (detection camera 145) for switching on (Morita, para. 89) the projection/detection unit upon the approach of an object to the projection screen (para 88 where the detection camera 145 picks up when the position of the marker 148 and the icon 143 are the same, and any function of the machine starts or stops).

Nonetheless, Morita in view of Kienzle fail to teach the sterilizable protective housing receiving the detection device. However, Tomasi teaches an input device that projects the display and detects input at the displayed surface (Tomasi, Fig. 1A) and the display projector and sensor are both part of the display (Tomasi, Fig. 1A, 140 is the display, 20 is the emitter projecting the virtual input device 50 per para. 30, and detector 60 per para. 41). Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the invention, to use an input device as taught by Tomasi, in Morita's control unit, and thus obtain the benefit of an inexpensive input device that can be operated from the same power source (Tomasi, para. 101) and also obtain the



Art Unit: 2629

benefit of a system that improves on separate camera/image-detector optical system by ignoring ambient light (as taught by Tomasi in para. 37).

By doing such combination, Morita's detection system (Morita, Fig. 16, element 145) would be part of the projection apparatus (as taught by Tomasi in Fig. 1A, which is equivalent to Morita projector 140 of Fig. 16) and thus, upon combination, Morita in view of Kienzle and Tomasi disclose:

the sterilizable protective housing (Kienzle, Fig. 10, sterile drape) operable for receiving, in a reversible manner (as shown in Kienzle, Fig. 10), the detection device (which correspond to Morita's Fig. 16, control unit 140 that upon combination with Tomasi includes both emitter and receiver as shown in Fig. 1A).

6. Regarding **claims 4, 10 and 11**, Morita in view of Kienzle and Tomasi teach a radiation source cooperating with the detection device (Tomasi para. 37 optical energy at fixed frequency).

Regarding **claims 5 and 12**, Morita in view of Kienzle and Tomasi the radiation source to be infrared (Tomasi, para. 34 lines 21-22).

7. Regarding **claims 6, 9, 13 and 16-18**, Morita in view of Kienzle and Tomasi teach the control unit further comprising a transmission unit (Tomasi, Fig. 1A processor 90 and display 140) for wireless communication (Tomasi, para. 33 lines 21-24) with a medical device (Morita's Fig. 16, projector 140, which corresponds to Tomasi's display

Art Unit: 2629

140) to be triggered in response to the detection device (Tomasi, para. 33) or wireless communication (Tomasi, para. 33 lines 21-24) with the detection device (Tomasi, Fig. 1A, display 140 includes detector 60).

8. Regarding **claims 7 and 14**, Morita teaches the control unit further comprising a device base (Fig. 16, arm 140) pivotably connected to the screen (as shown in Fig. 16).

9. **Claims 8 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. in US 2003/0218720 in view of Kienzle, III et al. in US 6,285,905 and Tomasi et al. in US 2002/0021287 as applied above, in further view of Sauer et al. in US 6,307,674 (hereinafter Sauer).

Morita in view of Kienzle and Tomasi do not teach the device base comprising a magnetic base. However, Sauer teaches a magnetic base (Sauer, Figs. 3a-b and col. 11 lines 57-67) used to hold a sterile screen (col. 12 lines 37-39) in a surgery room (Sauer, col. 13 lines 59-65). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Sauer's magnetic base, to hold Morita's sterile screen to Morita's holding arm (Morita, Fig. 16) in order to easily and accurately place the screen in the optimal viewing position (as taught by Sauer in col. 12 lines 65-67) given that it is Morita's objective to provide a screen that can be quickly removed (Morita, para. 104).

***Response to Arguments***

Applicant's arguments filed 7/27/2009 have been fully considered but they are not persuasive.

In the Remarks, pg 5, the Applicants argue with respect to claims 1 and 3, that Kienzle does not teach or suggest a sterilizable protective housing connected mechanically to the sterilizable screen. The examiner must respectfully disagree, please note that this limitation is taught by Morita in combination with Kienzle; and as noted by the Applicant in the Remarks pg. 5, Kienzle discloses a sterile drape (Kienzle, Fig. 10, 196) mechanically attached to a C-arm (Kienzle, Fig. 10, 112) by elastic straps (Kienzle, Fig. 10, 198), and as shown in Fig. 10, the C-arm is integrally assembled with an imager (Kienzle, Fig. 10, 152 and col. 16 lines 29-48). Thus, upon combination with Morita, Kienzle's sterile drape would be used to cover the arm holding the sterilizable screen of Morita (Morita, Fig. 16, 21-22).

The Applicants also argue in pg. 6 of the Remarks with respect to claims 1 and 3, that Kienzle's sterile drape is hung such that it confines the field of view of the sensors, thus blocking detection, and therefore Morita would not use the sterile drape to cover Morita's detection device.

The Examiner must again respectfully disagree, as pointed out by the Applicant in pg. 6 of the Remarks, Kienzle teaches in his embodiment of Fig. 13 (Kienzle, col. 10 lines 58-67) that the sterile drape is hung during surgery so that one sensor only accurately sees the C-arm and the other sensor only accurately see the surgical instrument, and therefore Kienzle is specifically teaching that the sensors are clearly

Art Unit: 2629

seeing the C-arm through the drape and are following the detection device, for pose detection (Kienzle, col. 18, lines 27-67), which upon combination with Morita would result in the covered arm (Morita, Fig. 16, 140) covered with an sterile drape but still in communication with the detection camera (Morita, Fig. 16, 145), because the detection camera will still be sensing the movements of the arm (as taught by Kienzle in col. 18 lines 58-67).

The Applicant further argues in pg. 6 of the Remarks with respect to claims 1 and 3, that Kienzle teaches away from using a sterilizable protective housing (sterile drape) because the surgeon can command the system without a sterilizable input device. However, Kienzle's Fig. 13 and col. 18 clearly teach an embodiment where the sterile drape is used along with a surgical tool; and also Morita clearly teaches the use of sterile drapes when describing the prior art and the need for sterile equipment during surgery (Figs. 21, 22, 24 and para. 110-113).

Furthermore, the Applicants argue -also in pg. 6 of the Remarks- that Kienzle discloses a drape covering emitters that are not detection devices or observation apparatus. While this is true, please note that Kienzle was used to obviate the use of a sterile drape in the control unit of Morita's (Morita, Fig. 16) which does include detection devices and a projection panel (as explained in the rejection above), not to teach the detection device or projection apparatus.

Additionally, please note from the rejection above, that Tomasi is used to improve on the projection system of Morita, and therefore include the emitter and detector in the same projection device (Tomasi, Fig. 1A, 20 and 60), which would

Art Unit: 2629

correspond to the projection apparatus of Morita (Morita, Fig. 16, 140) and consequently, given that the projection device would be covered by the sterile drape (upon combination of Morita and Kienzle), the protective housing (sterile drape) would receive the detection device (which are the emitter and detector of Tomasi's Fig. 1A corresponding to the projection device 140 of Morita).

Finally, the Applicants argue with respect to claims 6, 13, 17 and 18, that because Tomasi does not teach the wireless communication with a medical device, the combination of Morita and Tomasi do not teach a wireless communication with a medical device. Nevertheless, Morita teaches that the device (Morita, Fig. 16) can be used for observing a medical image; and please note that the examiner interpreted a medical device to be a device for medical use, and therefore the whole apparatus of Morita's Fig. 16 is a medical device because it is used to observe a medical image. Thus, as explained in the rejection above, upon combination of Morita and Tomasi, there would be a wireless communication (as taught by Tomasi) with a medical device (Morita, Fig. 16).

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2629

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LILIANA CERULLO whose telephone number is (571)270-5882. The examiner can normally be reached on Monday to Thursday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/566,942

Page 14

Art Unit: 2629

/L. C./

Examiner, Art Unit 2629

/Amr Awad/

Supervisory Patent Examiner, Art Unit 2629